

WEST

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TITLE: Ribozymes targeted to APO(a) RNA

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INVENTOR-INFORMATION:

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CLAIMS:

We claim:

1. An enzymatic RNA molecule which specifically cleaves RNA encoding apo(a) RNA, wherein said enzymatic RNA molecule comprises a substrate binding site and a nucleotide sequence within or surrounding said substrate binding site wherein said nucleotide sequence imparts to said enzymatic RNA molecule activity for the cleavage of said apo(a) RNA.
2. The enzymatic RNA molecule of claim 1, wherein said substrate binding site is complementary to said apo(a) RNA.
3. The enzymatic RNA molecule of claim 1, wherein said enzymatic RNA molecule is in a hammerhead motif.
4. The enzymatic RNA molecule of claim 2, wherein said substrate binding site comprises between 12 and 100 nucleotides complementary to said apo(a) RNA.
5. The enzymatic RNA molecule of claim 2, wherein said substrate binding site comprises between 14 and 24 nucleotides complementary to said apo(a) RNA.
6. An expression vector comprising a nucleic acid sequence encoding one or more enzymatic RNA molecules of claim 1 in a manner which allows expression of said enzymatic RNA molecules.
7. The expression vector of claim 6, wherein said expression vector is a viral vector.
8. The expression vector of claim 7, wherein said viral vector is a retrovirus vector.
9. The enzymatic RNA molecule of claim 1, wherein said enzymatic RNA molecule is chemically synthesized.
10. The enzymatic RNA molecule of claim 1, wherein said enzymatic RNA molecule is in a purified form.
11. The enzymatic RNA molecule of claim 1, wherein said enzymatic RNA molecule is active in the presence of divalent metal ions.

12. The enzymatic RNA molecule of claim 11, wherein said divalent metal ion is magnesium.
13. The enzymatic RNA molecule of claim 1, wherein said enzymatic RNA molecule comprises a sugar modification.
14. The expression vector of claim 6, wherein said nucleic acid sequence encoding said enzymatic RNA molecule is under the control of a mammalian transcription promoter.
15. The expression vector of claim 6, wherein said expression vector is a plasmid DNA vector.
16. The expression vector of claim 7, wherein said viral vector is an adenovirus vector.
17. The expression vector of claim 7, wherein said viral vector is an adeno-associated virus vector.
18. The expression vector of claim 7, wherein said viral vector is an alpha virus vector.
19. The expression vector of claim 18, wherein said viral vector is a Sindbis virus vector.
20. A method of cleaving apo(a) RNA comprising the step of contacting said apo(a) RNA with the enzymatic RNA molecule of claim 1 under conditions suitable for the cleavage of said apo(a) RNA.